



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,773	04/01/2004	Mohammed Alam	60889-101-US	2792

24341 7590 05/02/2005

MORGAN, LEWIS & BOCKIUS, LLP.
2 PALO ALTO SQUARE
3000 EL CAMINO REAL
PALO ALTO, CA 94306

EXAMINER

NGUYEN, VINH P

ART UNIT	PAPER NUMBER
----------	--------------

2829

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/816,773

Applicant(s)

ALAM ET AL

Examiner

VINH P. NGUYEN

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12, 13, 16-19, 20-22, 27- 29 is/are rejected.
- 7) ☒ Claim(s) 8-11, 14, 15, 23-26, 30 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2829

1. Claims 5-6 and 29 are objected to because of the following informalities:

In claims 5-6, it is unclear whether "a sheet that has a flat top surface" is another thermal conductive sheet and how this sheet is interrelated and associated with the burn-in board.

In claim 29, line 3, "may be" should be "is".

Appropriate correction is required.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7,12-13,16-19,21-22 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art figures 1-3 in view of Jones (pat # 6,392,431) and Wakefield et al (Pat # 5,073,816).

As to claims 1 and 12,16, Applicants' admitted prior art figures 1-3 disclose a system for burn-in test having burn-in boards (108) with devices under test (110) mounted on sockets (204), these boards are inserted into a chamber (106) a current source (126) for applying current to the devices under test (110) through the driver board (122) and driver board controller (120) and a chamber controller (118) for controlling the environment within the chamber. The admitted prior art does not teach a thermally conductive sheet placed in contact with the device under test (110). However, Jones teaches that it would have been well known for one of ordinary skill in the art to provide the device under test with a thermally conductive sheet (66). It would have

✓N been obvious for one of ordinary skill in the art to provide the thermal conductive sheet to the device of admitted prior art as taught by Jones ~~so that thermal runaway~~ in order to lower the equilibrium temperature of electronic devices during burn-in test.

As to claims 5-6, 20-21, it appears that the top surface of the thermally conductive sheet has an greater contact area than a sheet that has a flat bottom surface.

As to claims 7 and 22, the admitted prior art teaches that the test signal is sent to the device under test, data is received and analyzed.

As to claims 13, 27 and 29, the admitted prior art in view of Jones discloses a thermally conductive sheet placed on top of a device under test but the conductive sheet is not placed on a plurality of devices. However, Wakefield et al teach that it would have been well known to have the thermally conductive sheet (6) disposed on a plurality of devices. It would have been obvious for one of ordinary skill in the art to make the thermally conductive sheet of prior art in view of Jones big enough as taught by Wakefield et al so that this sheet could cover a plurality of devices.

As to claim 28, the thermally conductive sheet is biased by at least one device (50).

As to claims 2-4, 17-19, the prior art in view of Jones does not teach that the thermally conductive sheet is made of "aluminum or copper". However, Nakano et al teach that the thermally conductive sheet is made of aluminum or copper (see column 1, lines 30-32). It

would have been obvious for one of ordinary skill in the art to have the thermally conductive sheet of Jones made of aluminum or copper since these materials have a better thermal conductive properties.

4. Claims 8-11 ,14-15,23-26,30-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art does not disclose a second thermally conductive sheet located beneath the burn-in board such that the second conductive sheet is separated from the board by an electrically insulating but thermally conductive sheet made of silicon rubber impregnated with aluminum oxide.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Flatley et al (Pat # 4,839,587) disclose test fixture for tab circuits and devices.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH P. NGUYEN whose telephone number is 571-272-1964. The examiner can normally be reached on 6:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


VINH P NGUYEN
Primary Examiner
Art Unit 2829
04/28/05